What is claimed is:

1   1.   A method of operation within a data processing system that includes a plurality of

2   processing nodes each having access to a set of shared resources, the method

3   comprising:

4   detecting failure of a failed node of the plurality of processing nodes;

5   receiving a request to access a first resource of the set of shared resources; and

6   granting access to the first resource if the failed node was not responsible for

7   controlling access to the first resource and did not have exclusive access to the

8   first resource when the failure was detected.

1   2.   The method of claim 1 wherein granting access to the first resource comprises:

2   determining whether the failed node was responsible for controlling access to the

3   first resource; and

4   if the failed node was not responsible for controlling access to the first resource,

5   determining whether, at the time the failure was detected, the failed node had

6   exclusive access to the first resource.

1   3.   The method of claim 2 wherein determining whether the failed node was

2   responsible for controlling access to the first resource comprises inspecting a data

3   structure that indicates, for each shared resource within the set of shared resources,

4   which of the plurality of processing nodes is responsible for controlling access to

5   the shared resource.

1   4.   The method of claim 3 wherein determining whether the failed node was

2   responsible for controlling access to the first resource comprises identifying a data

3   element within the data structure that includes a first component that identifies the

4   first resource and a second component that identifies a processing node responsible

5   for controlling access to the first resource.

1   5.   The method of claim 1 further comprising preventing access to the first resource if

2   the failed node was responsible for controlling access to the first resource or if the

3   failed node had exclusive access to the first resource when the failure was detected.

1   6.   The method of claim 5 wherein preventing access comprises denying access to the

2   first resource.

1   7.   The method of claim 5 wherein preventing access comprises deferring access to the

2   first resource at least until another a first surviving node of the plurality of

3   processing nodes is assigned responsibility for the first resource and the first

4   surviving node determines whether, at the time the failure was detected, any of the

5   plurality of processing nodes other than the failed node had access to the first

6   resource.

1   8.   The method of claim 1 further comprising granting access to the first resource if the

2   failed node was responsible for controlling access to the first resource and if a

3   surviving node of the plurality of processing nodes had access to the first resource

4   when the failure was detected.

1   9.   The method of claim 1 further comprising reassigning responsibility for controlling

2   access to the first resource to a first surviving node of the plurality of processing

3   nodes if the failed node was responsible for controlling access to the first resource.

1   10.   The method of claim 9 further comprising generating a data structure within the

2   first surviving node that indicates whether a processing node of the plurality of

3   processing nodes, other than the failed node, had access to the first resource when

4   the failure was detected.

1   11.   The method of claim 10 further comprising granting access to the first resource if

2   (i) responsibility for controlling access to the first resource was reassigned after the

3   failure was detected and (ii) the data structure indicates that a processing node,

4   other than the failed node, had access to the first resource when the failure was

5   detected.

1   12.   The method of claim 1 further comprising adding an identifier of the first resource

2   to a validation data structure if the failed node was not responsible for controlling

3   access to the first resource but had exclusive access to the first resource when the

4   failure was detected.

1   13.   The method of claim 12 wherein granting access to the first resource comprises

2   granting access to the first resource if (i) the failed node was not responsible for

3   controlling access to the first resource and (ii) the validation data structure does not

4   include an identifier of the first resource.

1   14.   A method of operation within a data processing system that includes a plurality of

2   processing nodes each having access to a set of shared resources, the method

3   comprising:

4   detecting failure of a failed node of the plurality of processing nodes;

5   receiving a request to access a first resource of the set of shared resources; and

6   granting access to the first resource if (i) the failed node was responsible for

7   controlling access to the first resource and (ii) a non-failed node of the

8   plurality of processing nodes had access to the first resource when the failure

9   was detected.

1   15.   The method of claim 14 further comprising preventing access to the first resource if

2   the failed node was responsible for controlling access to the first resource and none

3   of the non-failed nodes of the plurality of processing nodes had access to the first

4   resource when the failure was detected.

1   16.   The method of claim 15 wherein preventing access comprises denying access to the

2   first resource.

1   17.   The method of claim 15 wherein preventing access comprises deferring access to

2   the first resource at least until a set of one or more transactions recorded in a redo

3   log for the failed node are redone.

1   18.   The method of claim 14 further comprising reassigning responsibility for

2   controlling access to the first resource to a first non-failed node of the plurality of

3   processing nodes if the failed node was responsible for controlling access to the

4   first resource.

1   19.   The method of claim 18 further comprising generating a data structure within the

2   first non-failed node that indicates whether a processing node of the plurality of

3   processing nodes, other than the failed node, had access to the first resource when

4   the failure was detected.

1   20.   The method of claim 19 wherein granting access to the first resource comprises

2   granting access to the first resource after reassigning responsibility for controlling

3   access to the first resource to the first non-failed node and after generating the data

4   structure that indicates whether a processing node other than the failed node had

5   access to the first resource.

1   21.   A computer-readable medium carrying one or more sequences of instructions

2   which, when executed by one or more processors, causes the one or more

3   processors to:

4   detect failure of a failed node of a plurality of processing nodes;

5   receive a request to access a first resource of a set of shared resources; and

6   grant access to the first resource if the failed node was not responsible for

7   controlling access to the first resource and did not have exclusive access to the

8   first resource when the failure was detected.

1   22.   A computer-readable medium carrying one or more sequences of instructions

2   which, when executed by one or more processors, causes the one or more

3   processors to:

4   detect failure of a failed node of a plurality of processing nodes;

5   receive a request to access a first resource of a set of shared resources; and

6   grant access to the first resource if (i) the failed node was responsible for

7   controlling access to the first resource and (ii) a non-failed node of the

8   plurality of processing nodes had access to the first resource when the failure

9   was detected.

1   23.   A system comprising:

2   a data storage device having a set of shared resources stored therein; and

3   a plurality of processing nodes each having a processing entity and a memory

4   coupled to the processing entity, the memory having program code stored

5   therein which, when executed by said processing entity, causes said

6   processing entity to:

7   detect failure of a failed node of the plurality of processing nodes;

8   receive a request to access a first resource of the set of shared resources; and

9   grant access to the first resource if the failed node was not responsible for

10   controlling access to the first resource and did not have exclusive access

11   to the first resource when the failure was detected.

1   24.   A system comprising:

2   a data storage device having a set of shared resources stored therein; and

3   a plurality of processing nodes each having a processing entity and a memory

4   coupled to the processing entity, the memory having program code stored

5   therein which, when executed by said processing entity, causes said

6   processing entity to:

7   detect failure of a failed node of the plurality of processing nodes;

8   receive a request to access a first resource of the set of shared resources; and

9   grant access to the first resource if (i) the failed node was responsible for

10   controlling access to the first resource and (ii) a non-failed node of the

11   plurality of processing nodes had access to the first resource when the

12   failure was detected.